

IN THE DRAWINGS

Pursuant to the condition of the Decision of this Office dated October 8, 1999, granting Applicant's Petition for the original filing date, please cancel Figs. 3 and 6 of the drawings from this application, as shown in Figs 3 and 6 in the attached Request for Approval of Drawing changes in which the figures are enclosed within brackets (in red in the attached drawing) and identified as "CANCELED" (again in red). By these changes to Figs. 3 and 6, Applicant does not intend to cancel Figs. 3a, 3b, 3c, 6a, or 6b.

Also, please amend Figs. 4 and 10 as indicated in the attached Request for Approval of Drawing Changes.

IN THE CLAIMS:

Please cancel claims 1-7. Add new application claims 8-48.

8. In a method of tying-in a first tubular member to a second tubular member in a wellbore extending into a subterranean formation, the method comprising the steps of:

- (a) positioning the second tubular member in the wellbore;
- (b) forming an opening in the wall of the second tubular member, the opening being formed either prior to or after positioning of the second tubular member in the wellbore;
- (c) forming a subsurface cavity external to the second tubular member in the subterranean formation wherein the step of forming comprises underreaming the subterranean formation to enlarge the wellbore;
- (d) positioning the first tubular member to extend from the interior of the second tubular member, through the opening, and into the subsurface cavity; and

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(e) inserting settable material into the subsurface cavity at the intersection between the first and second tubular members and allowing the settable material to set thereby sealing the intersection.

9. The method of claim 8, wherein the step of positioning the second tubular member in the wellbore comprises positioning a casing patch having a preformed opening in the wall thereof in the area of the enlarged wellbore.

10. The method of claim 8, wherein the first tubular member has an end shaped so as to cooperate with the inner edge of the opening.

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11. The method of claim 8, wherein the first tubular member includes a flanged element larger than the opening, the method further comprising the step of positioning the flanged element in contact with the inner surfaces of the second tubular member at the edge of the opening.

12. The method of claim 11 further comprising the steps of urging the flanged element against the second tubular member.

13. The method of claim 8, wherein the inner diameter of the first tubular member is of sufficient diameter to allow the passage of well tools.

14. The method of claim 8 further comprising the step of injecting gas into at least one of the first and second tubular members, to promote production of oil from the wellbore.

15. The method of claim 14 wherein the gas is steam.

16. The method of claim 8 further comprising the step of removing any material in the second tubular member to reopen the second tubular member to its full bore at the intersection of the first and second tubular members.

SbB

17. A method of forming the intersection between a primary borehole and a secondary borehole comprising the steps of:

under-reaming a portion of the primary borehole at the location of the secondary borehole to be formed;

installing a joint assembly in the primary borehole at the location of the secondary borehole to be formed;

forming an opening in the joint assembly at the location of the secondary borehole to be formed, the opening being formed either prior to or after the joint assembly is installed;

extending a tubular member through the opening and into the under-reamed portion of the primary borehole; and

drilling the secondary borehole through the extended tubular.

18. The method of claim 17 further including the step of applying a settable material into the under-reamed portion of the primary borehole and about the joint assembly and the tubular member at the underreamed portion.

SbB 19. The method of claim 18, wherein the secondary borehole is drilled through the extended tubular member after the settable material has hardened.

I 19 20. The method of claim 17, wherein the joint assembly has a preformed opening in the wall thereof.

I 20 21. The method of claim 17, wherein the tubular member has an end shaped so as to cooperate with the inner edge of the opening.

I 21 22. The method of claim 17, wherein the tubular member includes a flanged element larger than the opening, and the method further comprising the step of positioning the flanged element in contact with the inner surfaces of the joint assembly at the edge of the opening.

22 23. The method of claim 22 further comprising the steps of urging the flanged element against the joint assembly.

23 24. The method of claim 17, wherein the inner diameter of the tubular member is of sufficient diameter to allow the passage of well tools.

24 25. The method of claim 17 further comprising the step of injecting steam into at least one of the primary and secondary boreholes, to promote the production of oil from the wellbore.

25 26. The method of claim 17 further comprising the step of removing any material in the joint assembly to open the joint assembly to its full bore at the intersection of the primary and secondary boreholes.

SUBS 27. A method of forming the intersection between a primary, cased borehole and a secondary borehole comprising the steps of:

removing a portion of the casing adjacent the location of the secondary borehole to be formed;

subsequently under-reaming the primary borehole at the removed portion of the casing;

subsequently installing a joint assembly at the location of the secondary borehole to be formed, the joint assembly including a window formed either prior to or after the joint assembly is installed;

subsequently extending a tubular member through the window and into the under-reamed portion of the primary borehole; and

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drilling the secondary borehole through the window and the tubular member.

28. The method of claim 27 further comprising the step of applying a settable material into the under-reamed portion and about the tubular member and the joint assembly proximate the tubular member.

29. ²⁶ The method of claim 27, wherein the window in the joint assembly is preformed and positioned at the under-reamed portion of the primary borehole.

28. ²⁶ 30. The method of claim 27, wherein the tubular member has an end shaped so as to cooperate with the inner edge of the window.

29. ²⁶ 31. The method of claim 27, wherein the tubular member includes a flanged element larger than the window, the method further comprising the step of positioning the flanged element in contact with the inner surface of the joint assembly at the edge of the window.

29. ²⁶ 32. The method of claim 27, wherein the inner diameter of the tubular member is of sufficient diameter to allow the passage of well tools.

29. ²⁶ 33. The method of claim 27 further comprising the step of injecting steam into at least one of the primary and secondary boreholes, to promote production of oil from the wellbore.

29. ²⁶ 34. The method of claim 27 further comprising the step of removing any material in the joint assembly to reopen the joint assembly to its full bore at the intersection of the primary and secondary boreholes.

35. A method of forming a second-borehole from first well bore comprising the steps of:

enlarging a section of the first well bore at the subterranean location where the second borehole is to be formed;

Sub B providing a joint assembly changeable from a first position wherein the joint assembly is in a retracted position and is of a size and shape to pass through the well bore, to a second position wherein at least a portion of the joint assembly expands and extends into the enlarged section of the well bore;

AS running the joint assembly through the well bore to the enlarged section of the well bore while maintaining the joint assembly in the first position;
causing the joint assembly to expand to the second position; and
drilling a second borehole along a path defined by the joint assembly when in the second position.

36. The method of claim 35 further comprising the step of applying a settable material into the enlarged section of the well bore and about the joint assembly.

Sub A 37. The method of claim 35, wherein the first well bore is cased, and the joint assembly is of the size and shape that it will pass through the cased well bore, when in the first position.

Sub B7 38. The method of claim 35, wherein the joint assembly is hung from the casing above the enlarged section of the well bore.

I 39. The method of claim 35 further comprising the step of installing liners through the joint assembly.

37 40. A method of forming the intersection between a primary borehole and a secondary borehole comprising the steps of:

under-reaming a portion of the primary borehole at the location of the secondary borehole to be formed;

installing an expandable bladder within the under-reamed portion of the primary borehole;

installing a guide member within the bladder at the location of the secondary borehole to be formed; and

extending the bladder outwardly from the primary borehole and into the under-reamed portion.

AS ~~41.~~ ³⁷ The method of claim ~~40~~, wherein the step of extending the bladder includes applying settable material into the bladder.

~~41.~~ ³⁷ The method of claim ~~40~~ further comprising the step of drilling the secondary borehole along a path defined by the guide member.

~~40~~ ³⁷ The method of claim ~~40~~, wherein the guide member is a tubular member.

~~41.~~ ³⁷ The method of claim ~~40~~, wherein the guide member and the bladder are each part of a joint assembly run into the primary borehole.

~~42.~~ ³⁷ The method of claim ~~44~~, wherein the guide member and the bladder are run into the well in a retracted position and are both subsequently extended into the under-reamed portion of the primary borehole.

~~43.~~ ³⁷ The method of claim ~~40~~, wherein the joint assembly includes a casing joint and wherein the bladder is formed over the casing joint.

~~44.~~ ³⁷ The method of claim ~~46~~, wherein the guide member, when in the retracted position, is inside the casing joint.

~~45.~~ ³⁷ The method of claim ~~46~~, wherein during the extending step the bladder at the under-reamed portion extends outwardly beyond the outer diameter of the casing joint.

48 49. The method of claim 41, wherein during the applying a settable material step, settable material is applied about at least a portion of the guide member.

47 50. A method of forming the intersection between a primary borehole and a secondary borehole to be formed from the primary borehole comprising the steps of: under-reaming a portion of the primary borehole at the location of the secondary borehole to be formed;

45 installing an expandable bladder within the under-reamed portion of the primary borehole;

installing an expandable guide member within the bladder at the location of the secondary borehole to be formed;

extending the expandable guide member and the bladder outwardly into the under-reamed portion; and

applying a settable material into the bladder to urge the bladder against the walls of the under-reamed portion of the primary borehole.

48 51. The method of claim 50 further comprising the step of drilling the secondary borehole along a path defined by the extended guide member.

49 52. The method of claim 50, wherein the guide member and the bladder are each part of a casing joint run into the primary borehole.

50 53. The method of claim 50, wherein the guide member and the bladder are run into the well in a retracted position and are subsequently extended into the under-reamed portion of the primary borehole.